

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>2781-10PCT-1</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. <b>PCT/DE2004/002685</b>	International filing date ( <i>day/month/year</i> ) <b>07.12.2004</b>	Priority date ( <i>day/month/year</i> ) <b>09.12.2003</b>	
International Patent Classification (IPC) or national classification and IPC <b>B01D53/70, B01D53/81, F23G7/06, F28D17/00</b>			
Applicant <b>CLAUSTHALER UMWELTTECHNIKINSTITUT GMBH (CUTEC-INSTITUT)</b>			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>5</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/DE2004/002685

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 

This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
 
  - international search (Rule 12.3 and 23.1(b))
  - publication of the international application (Rule 12.4)
  - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 

the international application as originally filed/furnished  
 the description:  
 pages 1, 2, 5-12 as originally filed/furnished 08.10.2005 with letter of 04.10.2005  
 pages\* 3, 4 received by this Authority on \_\_\_\_\_  
 pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 the claims:  
 nos. \_\_\_\_\_ as originally filed/furnished  
 nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19 08.10.2005 with letter of 04.10.2005  
 nos.\* 1-17 received by this Authority on \_\_\_\_\_  
 nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 the drawings:  
 sheets 1/7-7/7 as originally filed/furnished  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3.  The amendments have resulted in the cancellation of:
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 

the description, pages \_\_\_\_\_  
 the claims, nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (*specify*): \_\_\_\_\_  
 any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/DE2004/002685

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1–17	YES
	Claims	_____	NO
Inventive step (IS)	Claims	1–17	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	1–17	YES
	Claims	_____	NO

**2. Citations and explanations (Rule 70.7)**

- 1.1 The present application relates to a method and a device for the thermal purification of a waste gas that contains organosilicon compounds. The waste gas is regeneratively preheated using a heat-retaining material contained in a regenerator, said heat-retaining material being at least in part a packing material. Oxidation and waste gas purification is consequent upon said preheating process. The claimed method is characterised in that the heat-retaining packing material is withdrawn, purified and then returned to the regenerator. In this way, the adhesions formed by the oxidation of the organosilicon compounds are removed and clogging of the heat-retaining material is eliminated. The claimed device is characterised by associated structural features.
- 1.2 Document JP-A-2002061822 (D1) is considered to be the closest prior art. The claimed subject matter differs from D1 by virtue of the features of the characterising parts of the independent claims. The device according to D1 comprises a combustion

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/DE2004/002685**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

chamber equipped with a burner. By means of said burner, the temperature is kept permanently between 750°C and 810°C. In this way, the formation of amorphous clogging oxidation products is precluded and separate treatment of the heat-retaining material is therefore unnecessary.

Document US-A-3870474 (D2) discloses (see the passages cited in the search report) a regenerative thermal oxidation system for reducing nitrogen oxide emissions. The heat-retaining packing material that is in part clogged with soot and carbon is withdrawn from the regenerator and replaced with fresh or purified packing material. However, D2 contains nothing to indicate that the described system could be modified in order to treat waste gas containing organosilicon compounds.

Document US-A-4940567 (D3) discloses (see the passages cited in the search report) a regenerative catalytic reduction system for the reduction of nitrogen oxide emissions. The heat-retaining material is a catalytic packing material which circulates through the system. Ammonia is added. The deactivated catalytic particles are eliminated or purified and replaced with fresh and purified particles. As in document D2, there is nothing in D3 to indicate that the described system might be modified in order to treat a waste gas containing organosilicon compounds.

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**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**International application No.  
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- 1.3 Thus, the subject matter of independent claims 1 and 13 is novel over the prior art citations and not rendered obvious by said documents. The requirements of PCT Article 33(2) and (3) are satisfied. The same arguments also apply in respect of independent claim 17, in which the use of the device defined in claim 13 is claimed. Claim 17 therefore satisfies the requirements of PCT Article 33(2) and (3).
2. Dependent claims 2-12 and 14-16 relate to special embodiments of the subject matter of claims 1 and 13 and therefore satisfy the requirements of PCT Article 33(2) and (3).
3. The subject matter of all the claims is considered to be industrially applicable (PCT Article 33(4)).

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

International application No.

PCT/DE2004/002685

**Box No. VII      Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

1. The closest prior art (D1 and D2) has not been acknowledged in the description (PCT Rule 5.1(a) (ii)).